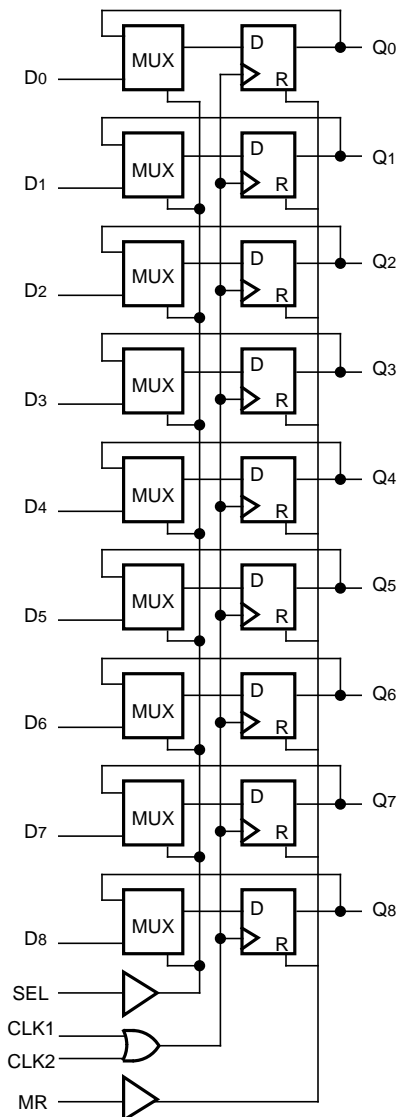


## FEATURES

- 700MHz min. operating frequency
- Extended 100E VEE range of -4.2V to -5.5V
- 9 bits wide for byte-parity applications
- Asynchronous Master Reset
- Dual clocks
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75kΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E143
- Available in 28-pin PLCC package

## BLOCK DIAGRAM



## DESCRIPTION

The SY10/100E143 are high-speed 9-bit hold registers designed for use in new, high-performance ECL systems. The E143 can hold current data or load new data. The nine inputs, D<sub>0</sub>-D<sub>8</sub>, accept parallel input data.

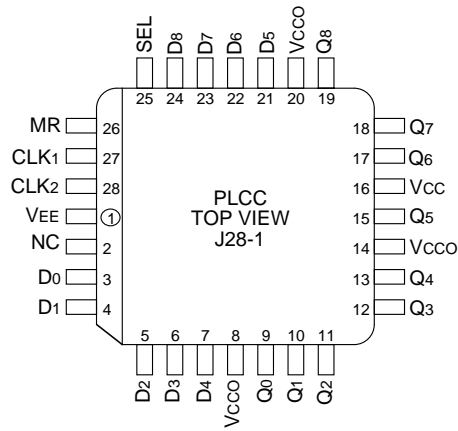
The SEL (Select) control pin serves to determine the mode of operation; either HOLD or LOAD. The input data has to meet the set-up time before being clocked into the nine input registers on the rising edge of CLK<sub>1</sub> or CLK<sub>2</sub>. The MR (Master Reset) control signal asynchronously resets all nine registers to a logic LOW when a logic HIGH is applied to MR.

The E143 is designed for applications requiring high-speed registers, pipeline registers, synchronous operation, and is also suitable for byte-wide parity.

## PIN NAMES

Pin	Function
D <sub>0</sub> -D <sub>8</sub>	Parallel Data Inputs
SEL	Mode Select Input
CLK <sub>1</sub> , CLK <sub>2</sub>	Clock Inputs
MR	Master Reset
Q <sub>0</sub> -Q <sub>8</sub>	Data Outputs
NC	No Connection
V <sub>CC0</sub>	V <sub>CC</sub> to Output

**PACKAGE/ORDERING INFORMATION**



**28-Pin PLCC (J28-1)**

**Ordering Information<sup>(1)</sup>**

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E143JC	J28-1	Commercial	SY10E143JC	Sn-Pb
SY10E143JCTR <sup>(2)</sup>	J28-1	Commercial	SY10E143JC	Sn-Pb
SY100E143JC	J28-1	Commercial	SY100E143JC	Sn-Pb
SY100E143JCTR <sup>(2)</sup>	J28-1	Commercial	SY100E143JC	Sn-Pb
SY10E143JZ <sup>(3)</sup>	J28-1	Commercial	SY10E143JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E143JZTR <sup>(2, 3)</sup>	J28-1	Commercial	SY10E143JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E143JZ <sup>(3)</sup>	J28-1	Commercial	SY100E143JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E143JZTR <sup>(2, 3)</sup>	J28-1	Commercial	SY100E143JZ with Pb-Free bar-line indicator	Matte-Sn

**Notes:**

1. Contact factory for die availability. Dice are guaranteed at T<sub>A</sub> = 25°C, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

**TRUTH TABLE**

SEL	MODE
L	LOAD
H	HOLD

**DC ELECTRICAL CHARACTERISTICS**

VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition	
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.			
I <sub>IH</sub>	Input HIGH Current	—	—	150	—	—	150	—	—	150	μA	—	
I <sub>EE</sub>	Power Supply Current										mA	—	
		10E	—	120	145	—	120	145	—	120			145
		100E	—	120	145	—	120	145	—	138			165

**AC ELECTRICAL CHARACTERISTICS**

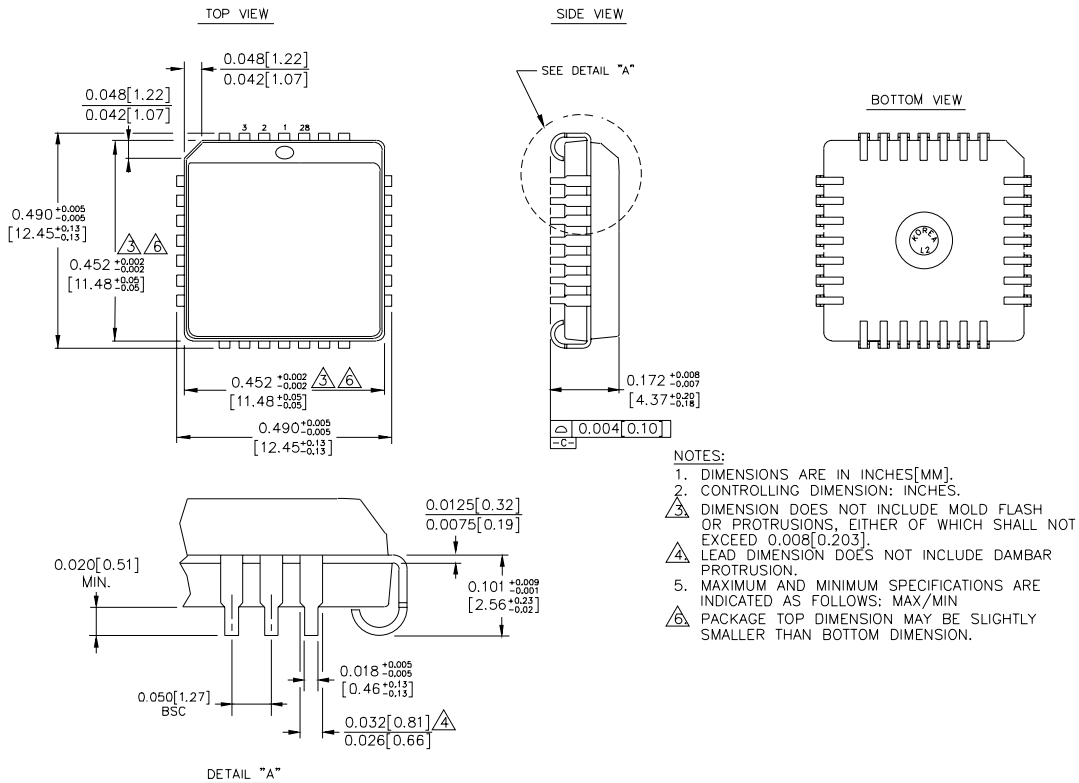
VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
f <sub>MAX</sub>	Max. Toggle Frequency	700	900	—	700	900	—	700	900	—	MHz	—
t <sub>PD</sub>	Propagation Delay to Output CLK MR	600	800	1000	600	800	1000	600	800	1000	ps	—
		600	800	1000	600	800	1000	600	800	1000		
t <sub>S</sub>	Set-up Time D SEL	50	—100	—	50	—100	—	50	—100	—	ps	—
		300	150	—	300	150	—	300	150	—		
t <sub>H</sub>	Hold Time D SEL	300	100	—	300	100	—	300	100	—	ps	—
		75	—150	—	75	—150	—	75	—150	—		
t <sub>RR</sub>	Reset Recovery Time	900	700	—	900	700	—	900	700	—	ps	—
t <sub>PW</sub>	Minimum Pulse Width CLK, MR	400	—	—	400	—	—	400	—	—	ps	—
t <sub>skew</sub>	Within-Device Skew	—	75	—	—	75	—	—	75	—	ps	1
t <sub>r</sub> t <sub>f</sub>	Rise/Fall Time 20% to 80%	300	525	800	300	525	800	300	525	800	ps	—

**Note:**

1. Within-device skew is defined as identical transitions on similar paths through a device.

**28-PIN PLCC (J28-1)**



- NOTES:
1. DIMENSIONS ARE IN INCHES[MM].
  2. CONTROLLING DIMENSION: INCHES.
  3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.008[0.203].
  4. LEAD DIMENSION DOES NOT INCLUDE DAMBAR PROTRUSION.
  5. MAXIMUM AND MINIMUM SPECIFICATIONS ARE INDICATED AS FOLLOWS: MAX/MIN
  6. PACKAGE TOP DIMENSION MAY BE SLIGHTLY SMALLER THAN BOTTOM DIMENSION.

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